Wiring Diagram

DHP-A Opti

BFN+? Mnrg
BFN+? Mnrg QN

Danfoss A/S is not liable or bound by warranty if these instructions are not adhered to during installation or service.

The English language is used for the original instructions. Other languages are a translation of the original instructions. (Directive 2006/42/EC)

© Copyright Danfoss A/S

Table of Contents

1 Legend 4
1.1 Legend 4

2 DHP-A Opti 400V 3N 6
2.1 DHP-A Opti 6-12kW 400V 3N 6

3 DHP-A Opti SP 230V 1N 13
3.1 DHP-A Opti 6-12kW SP 230V 1N 13

1 Legend

1.1 Legend

Number/Note	Description
1	Heat pump
3	Outdoor unit
36	Circulation pump (system)
40	Expansion card
50	Outdoor sensor
51	System supply line sensor
52	Sensor for EM-Modul module/ret.line sensor
53	Hot water starting sensor
55	Hot water sensor top
62	Room Sensor
69	Shunted loop
71	Flow guard
115	Immersion heater
117	Additional heater
301	Compressor
302	Brine pump
303	Radiator pump
304	Circulation pump
305	Fan
306	System circulation pump
307	Distribution circulation pump
308	Condenser pump
309	Hot gas pump
310	Reversing valve
311	4 way valve
312	Bypass valve
313	Electronic expansion valve
317	Immersion heater
340	Temperature guard
341	Thermal overload relay
342	Circuit breaker
343	Line circuit breaker
344	Alarm relay
345	Contactor
350	Soft start
351	Capacitor
353	Drip tray heater
354	Compressor Heater
355	Drip tray heater cable
362	Shunt valve control

Number/Note	Description
363	Reversing valve hot-water
364	Shunt valve hot-water
365	Supply line sensor
366	Return line sensor
367	System shunt
368	Distribution circuit shunt
369	Pool heating valve
370	2nd distribution circuit pump
371	Auxiliary heating Oil/El
372	Auxiliary top heating
373	Distribution circuit shunt 2
374	Shunt defroster
375	Brine valve
376	Shunt cooling
403	Operating pressure switch
405	Heating out sensor
406	Room sensor
407	HGW sensor
408	EVU
410	Hot water
411	Heating return sensor
412	Brine out sensor
413	Brine in sensor
414	High pressure switch
415	Low pressure switch
416	Discharge pipe sensor
417	Defrost sensor
418	Refrigerant 1 sensor
419	Refrigerant 2 sensor
420	Pressure transmitter
421	Suction gas sensor
422	Dewpoint sensor
423	Sensor pool
424	Sensor cooling
425	Sensor buffer tank
426	Sensor system supply line
427	Sensor distribution circuit 1
428	Sensor distribution circuit 2
451	Control unit
452	I/O controller
453	Display

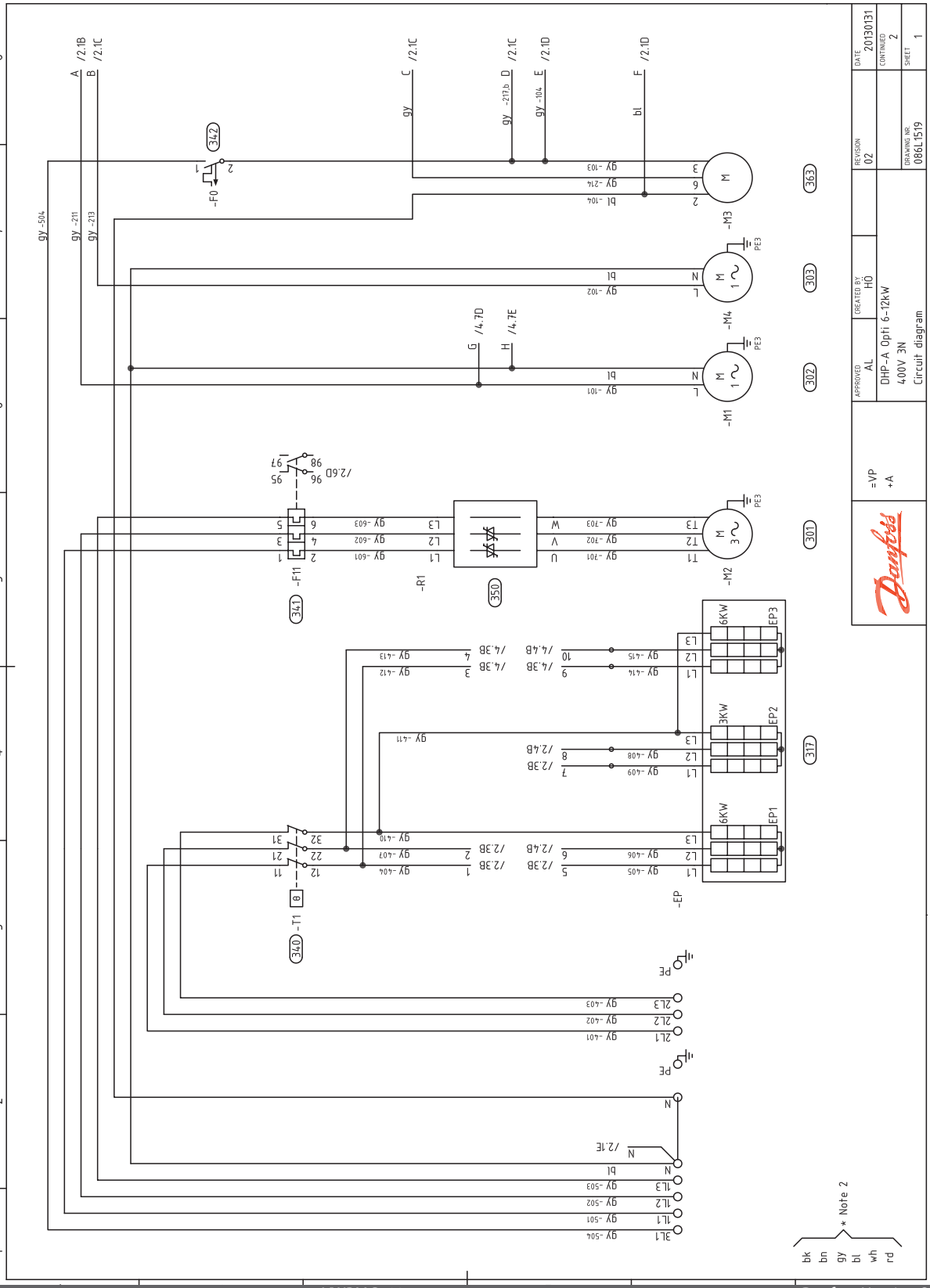
Wiring Diagram DHP-A Opti

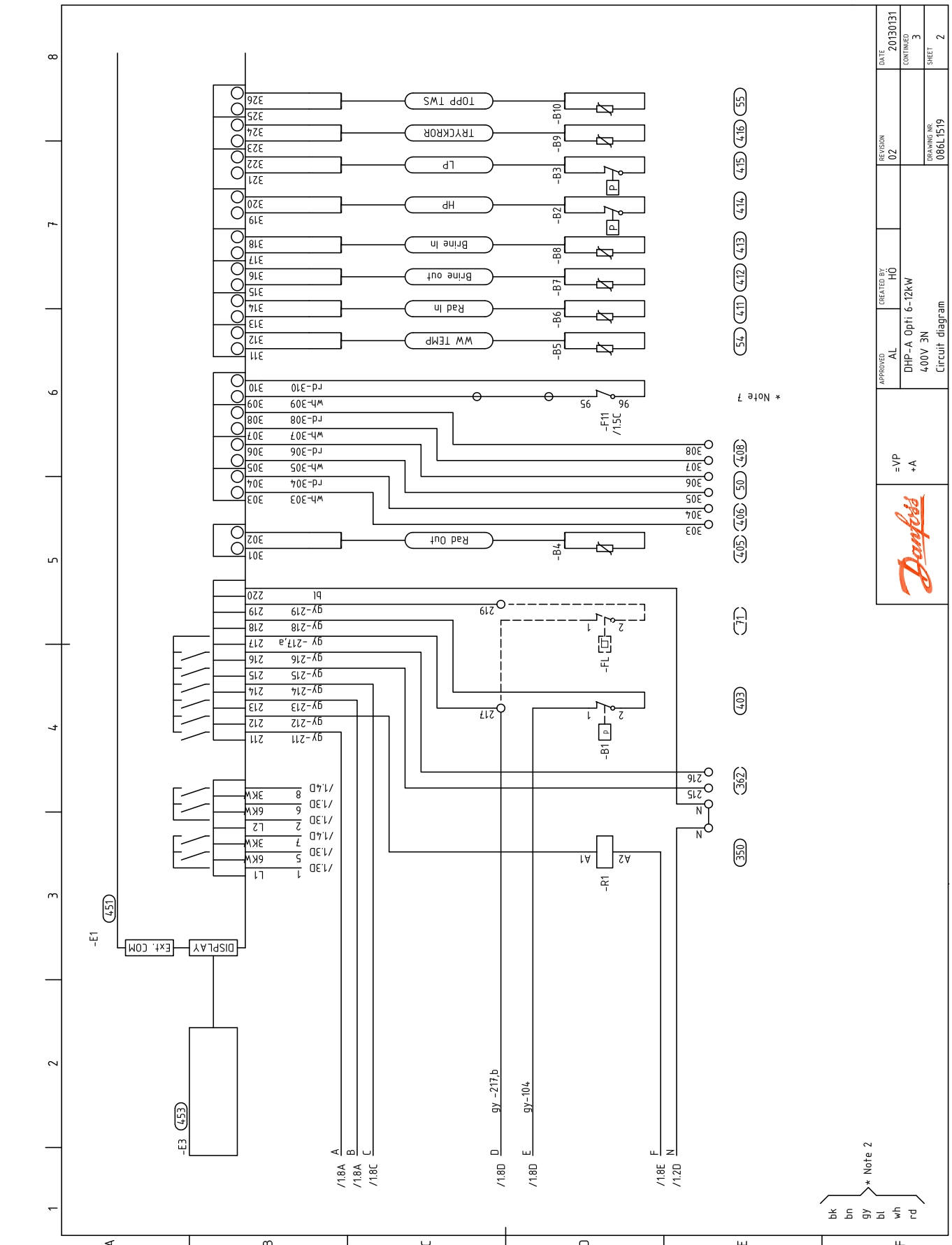
Number/Note	Description
454	Electronic expansion valve controller
455	Indoor hub controller
456	Current limiter
457	WM-HPC Control module
458	HPC-RM Relay module
459	HPC-EM Expansion module
460	HPC-CM Cooling module
461	HPC-OP Operator panel
* Note 1	Strapped at delivery
* Note 2	blue
* Note 2	brown
* Note 2	grey
* Note 2	green
* Note 2	yellow
* Note 2	violet
* Note 2	pink
* Note 2	red
* Note 2	black
* Note 2	white
* Note 3	Can be connected to 230V single phase if auxiliary heater is disconnected.
* Note 4	When connected to 230V single phase straps to auxiliary heater shall be removed.
* Note 5	Remove jumper when using separate supply of control circuit

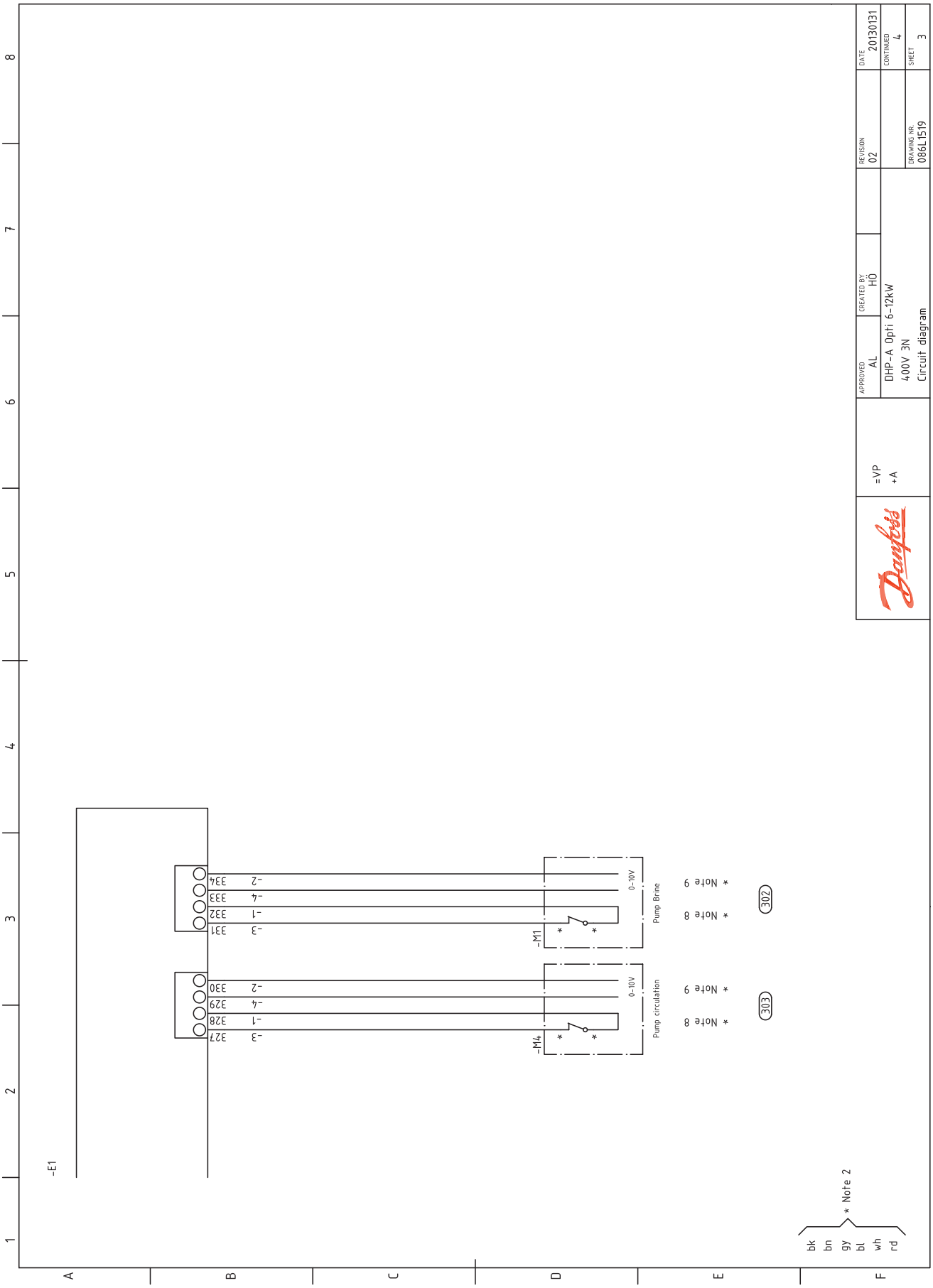
Number/Note	Description
* Note 6	Remove jumper when using flowguard
* Note 7	Overload relay trip/tripped out
* Note 8	Alarm
* Note 9	Speed control
* Note 10	Please make sure that all supply lines are disconnected before attending any work to internal electrical parts!
* Note 11	Fan overload relay
* Note 12	To indoor unit
* Note 13	To slave unit
* Note 14	To electronic expansion unit
* Note 15	Immersion heater or external auxiliary heater
* Note 16	Potential free contact
* Note 17	To outdoor unit
* Note 18	To expansion Unit
* Note 19	Communication
* Note 20	Passive cooling Brine circuit
* Note 21	Passive cooling Radiator circuit
* Note 22	Combined heat source system
* Note 23	Passive cooling
* Note 24	Remove jumper when EVU
* Note 25	EVU constant power supply
* Note 26	Remove jumper if EVU is supplied separately
* Note 27	Remove jumper when flowguard or pressure switch Brine is used

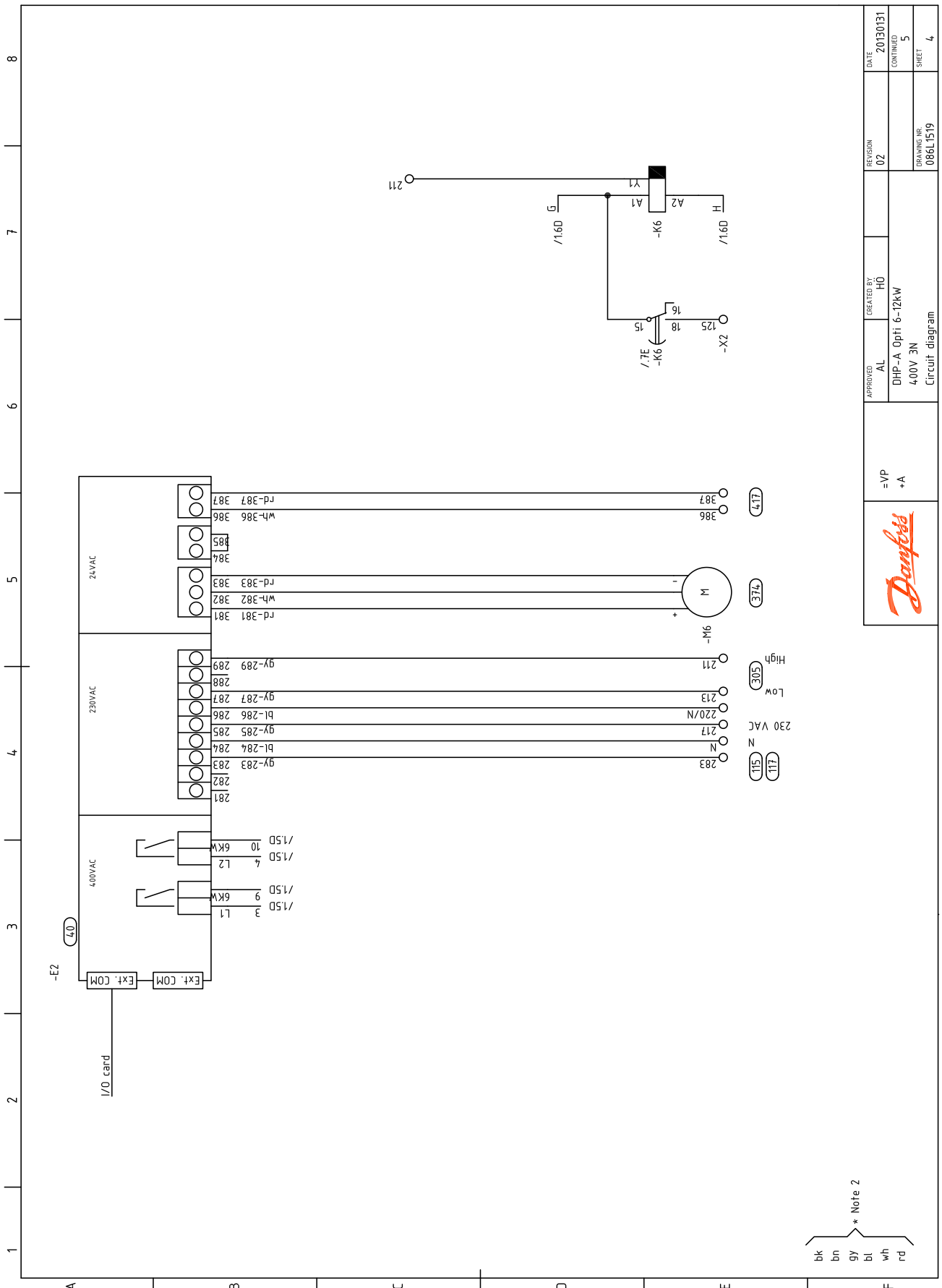
2 DHP-A Opti 400V 3N

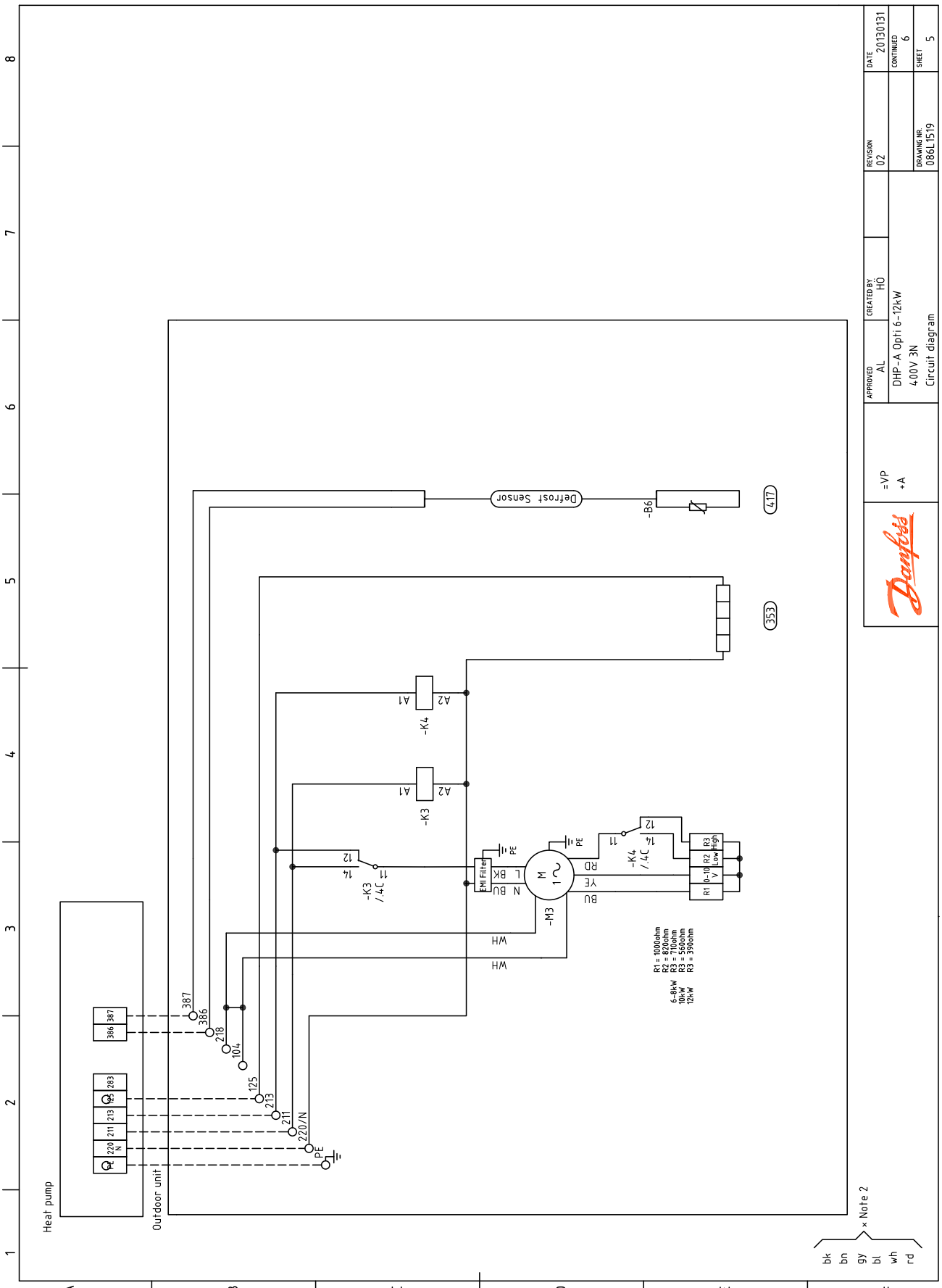
2.1 DHP-A Opti 6-12kW 400V 3N

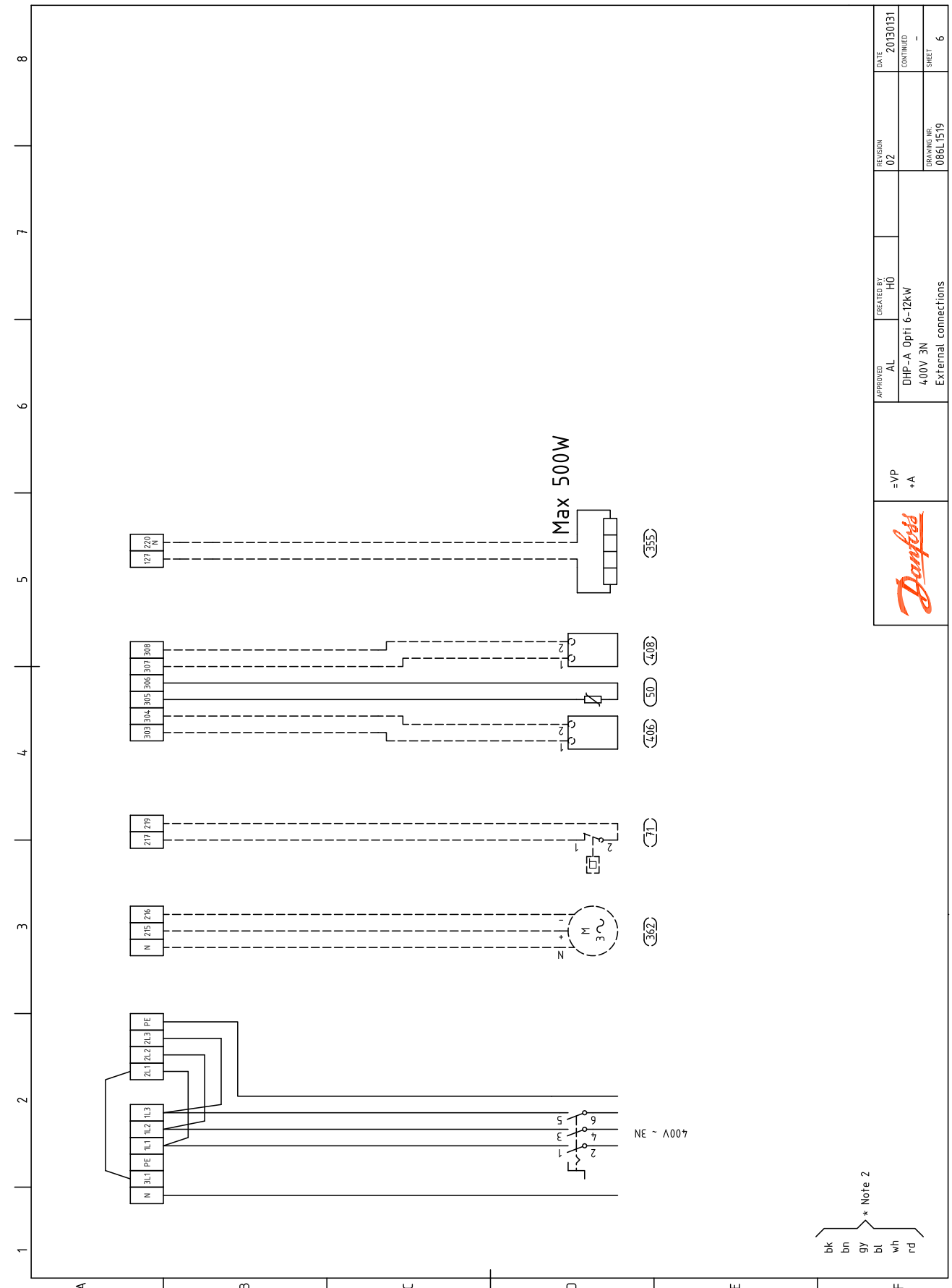



DHP-A Opti 6-12kW
400V 3N
Circuit diagram
APPROVED AL
CREATED BY HÖ
DRAWING NR. 086L1519
REVISION 02
DATE 20130131
SHEET 2
CONTINUED 3
=VP +A
-E1 DISPLAY Ext. COM
-E3
-B1 -B2 -B3 -B4 -B5 -B6 -B7 -B8 -B9 -B10
-FL -F11 -R1
WW TEMP
Rad In
Brine out
Brine In
HP
LP
TRYCKROR
TOPP TWS
Rad Out
* Note 7
* Note 2


=VP
+A
APPROVED AL
CREATED BY HÖ
REVISION 02
DATE 20130131
CONTINUED 4
SHEET 3
DRAWING NR 0861519
DHP-A Opti 6-12kW
400V 3N
Circuit diagram
-E1
-M1
-M4
Pump Brine
Pump circulation
0-10V
* Note 8
* Note 9
* Note 2
302
303
331
332
333
334
327
328
329
330
bk
bn
gy
bl
wh
rd

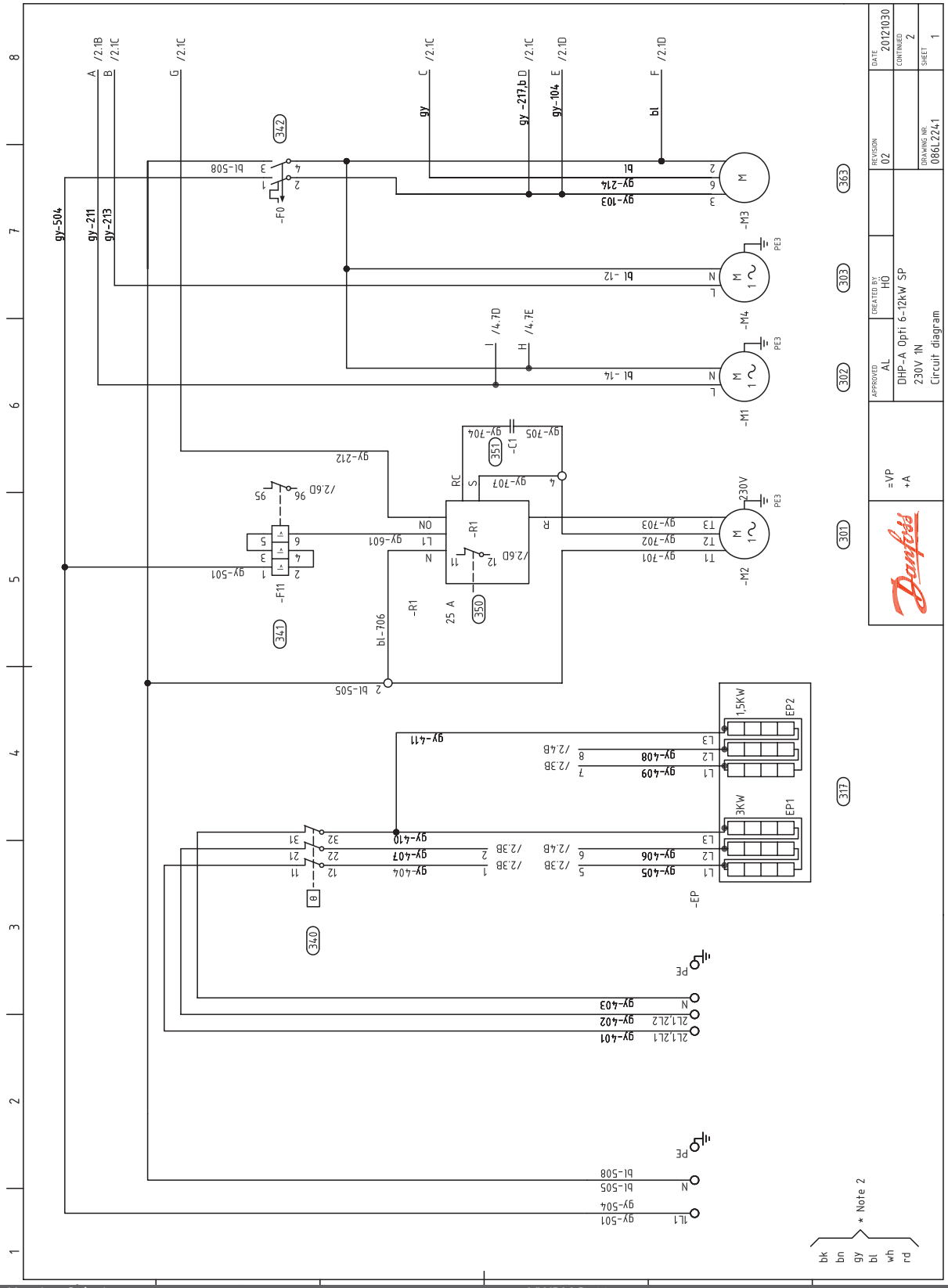

DHP-A Opti 6-12kW
400V 3N
Circuit diagram
AL
HÖ
02
20130131
086L1519
=VP
+A
-M9
-K6
-X2
-E2
I/O card
24VAC
230VAC
400VAC
230 VAC
High
Low
* Note 2
bk
bn
gy
bl
wh
rd

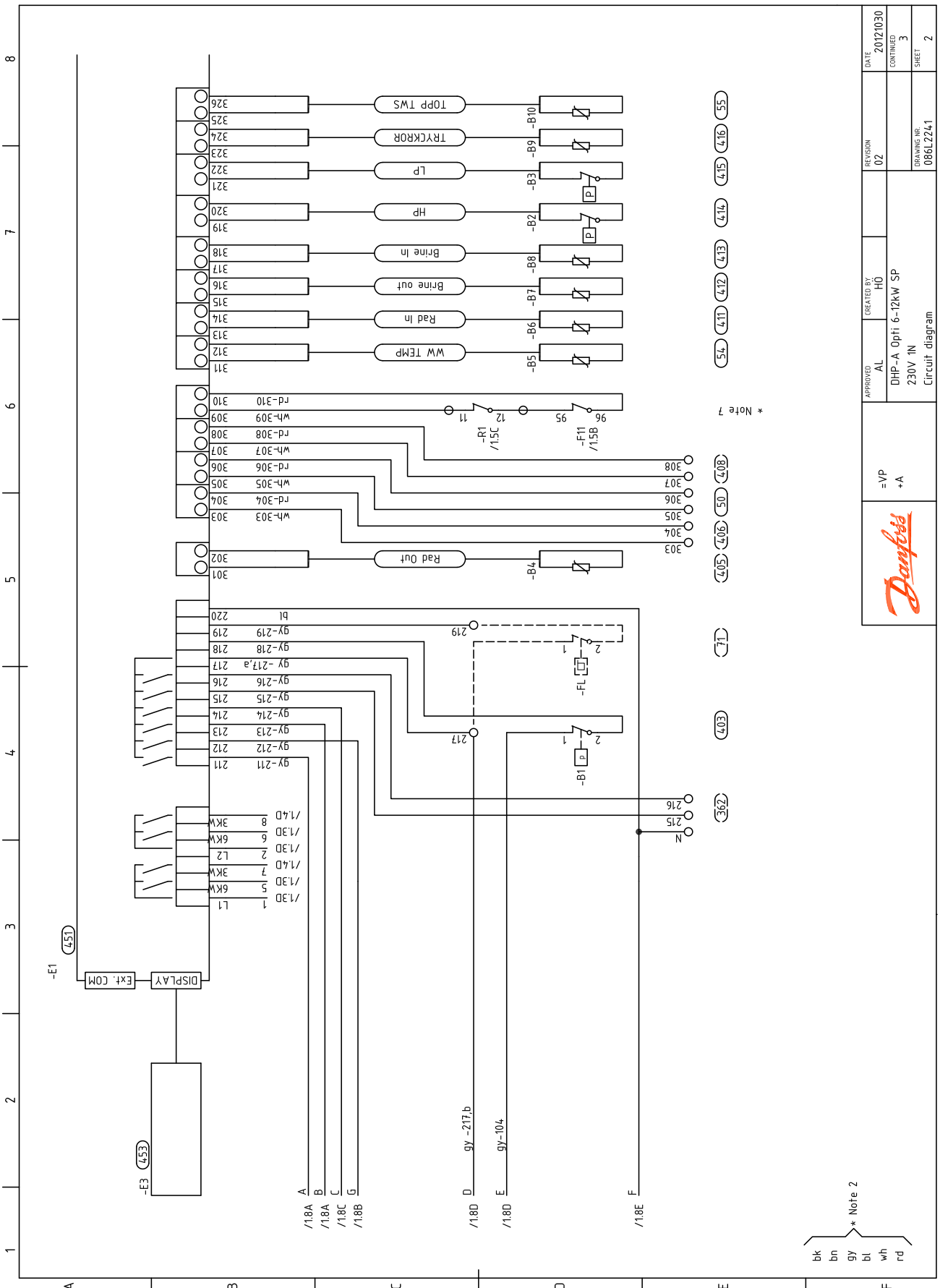

Heat pump
Outdoor unit
Defrost Sensor
-B6
417
353
-K4
-K3
-M3
EMI Filter
R1 = 1000ohm
R2 = 820ohm
R3 = 3700ohm
R3 = 5600ohm
R3 = 3900ohm
6-8kW
10kW
12kW
x Note 2
bk bn gy bl wh rd
=VP
+A
APPROVED AL
CREATED BY HÖ
REVISION 02
DRAWING NR. 086L1519
DATE 20130131
CONTINUED 6
SHEET 5
DHP-A Opti 6-12kW
400V 3N
Circuit diagram

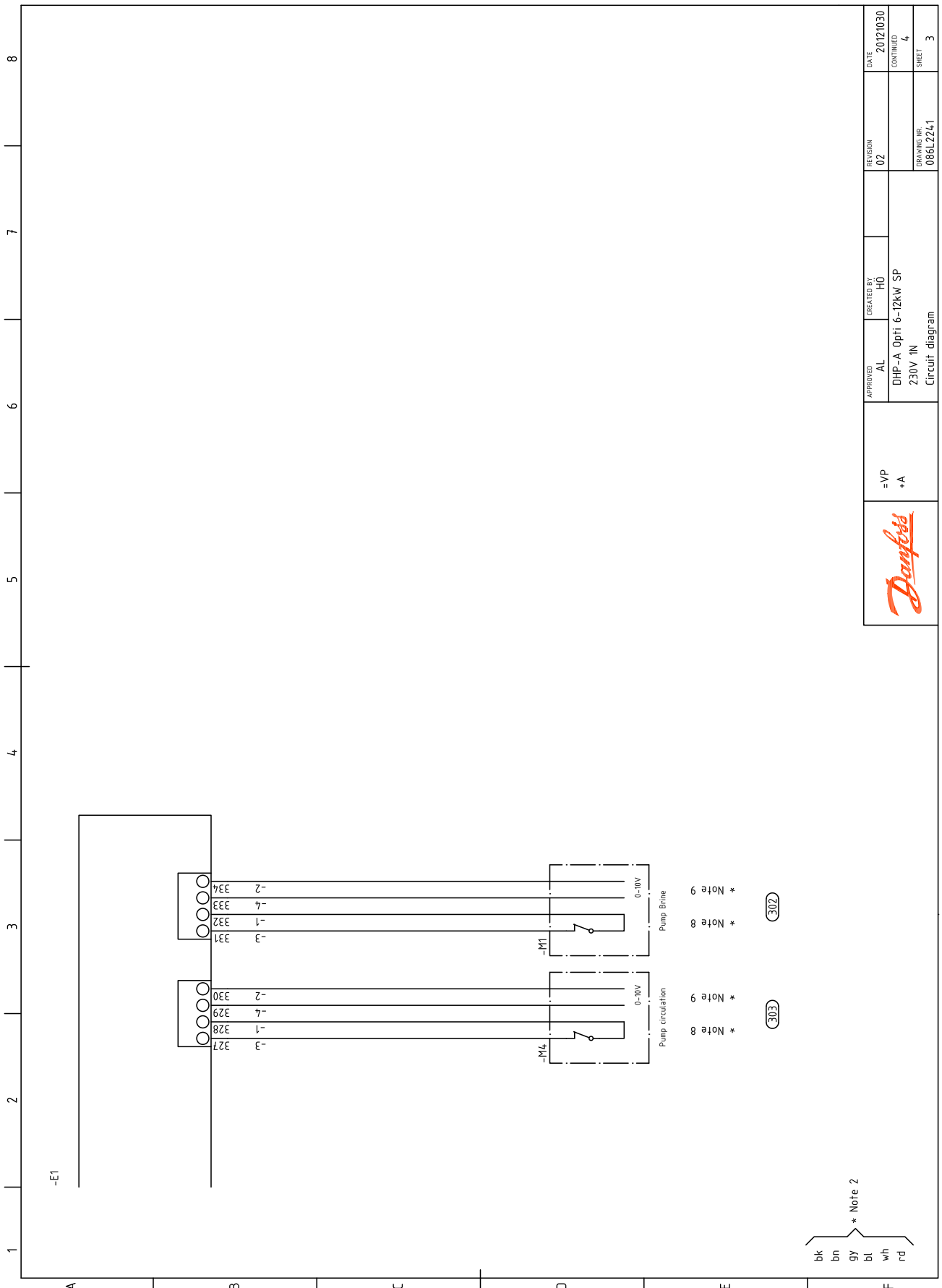

Max 500W
400V ~ 3N
* Note 2
bk
bn
gy
bl
wh
rd
DHP-A Opti 6-12kW
400V 3N
External connections
APPROVED AL
CREATED BY HÖ
REVISION 02
DRAWING NR. 086L1519
DATE 20130131
SHEET 6

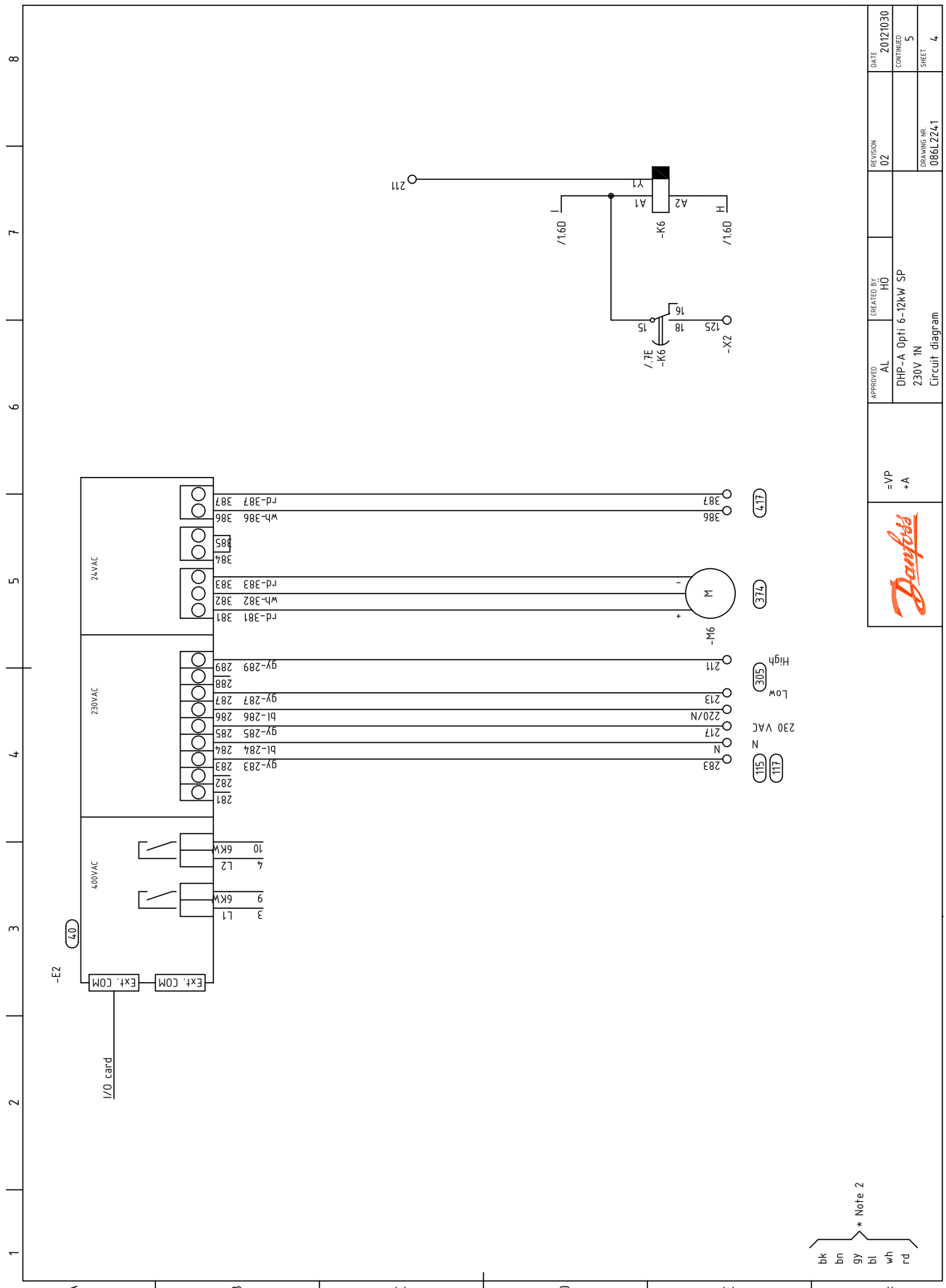
3 DHP-A Opti SP 230V 1N

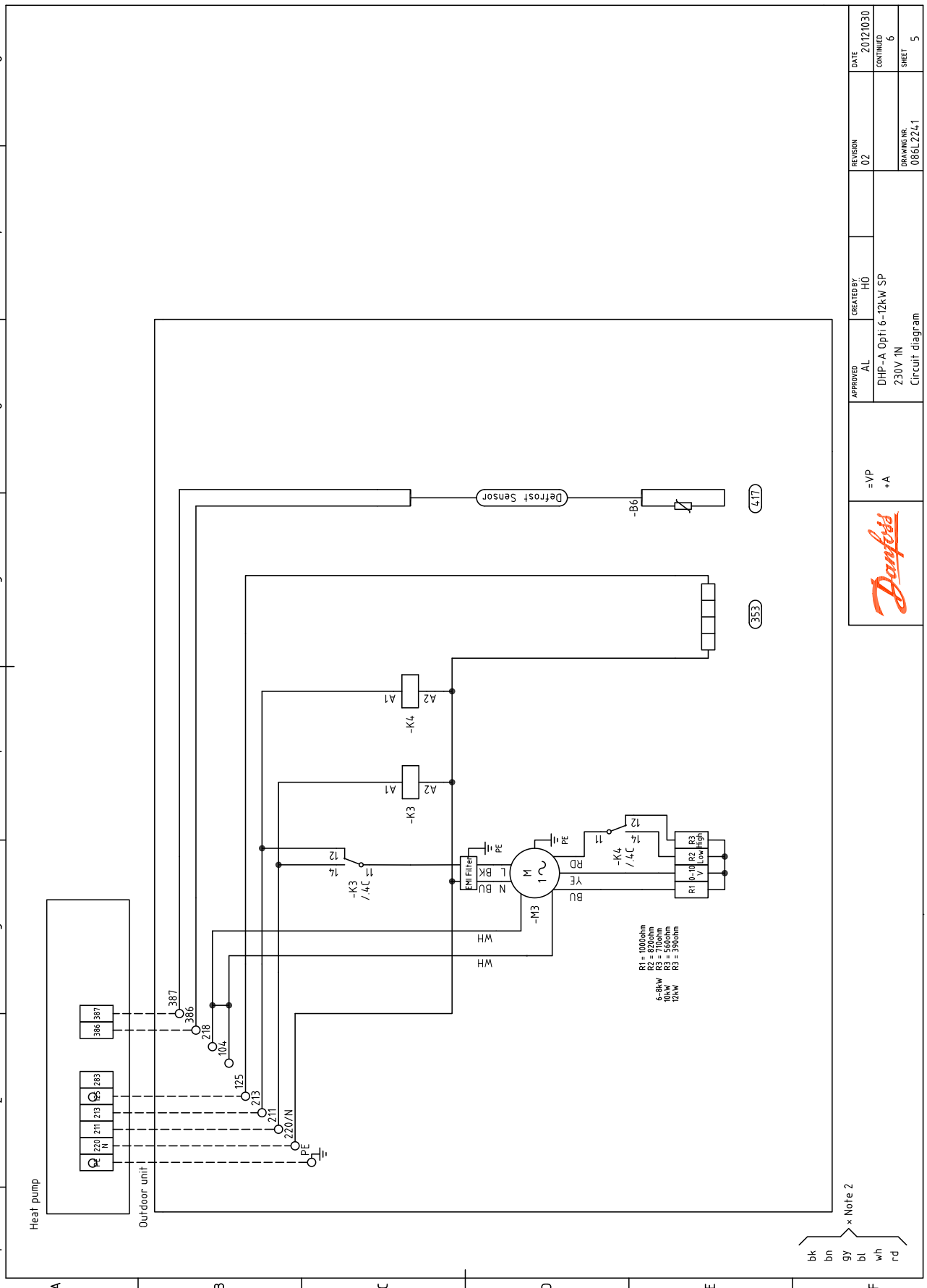
3.1 DHP-A Opti 6-12kW SP 230V 1N

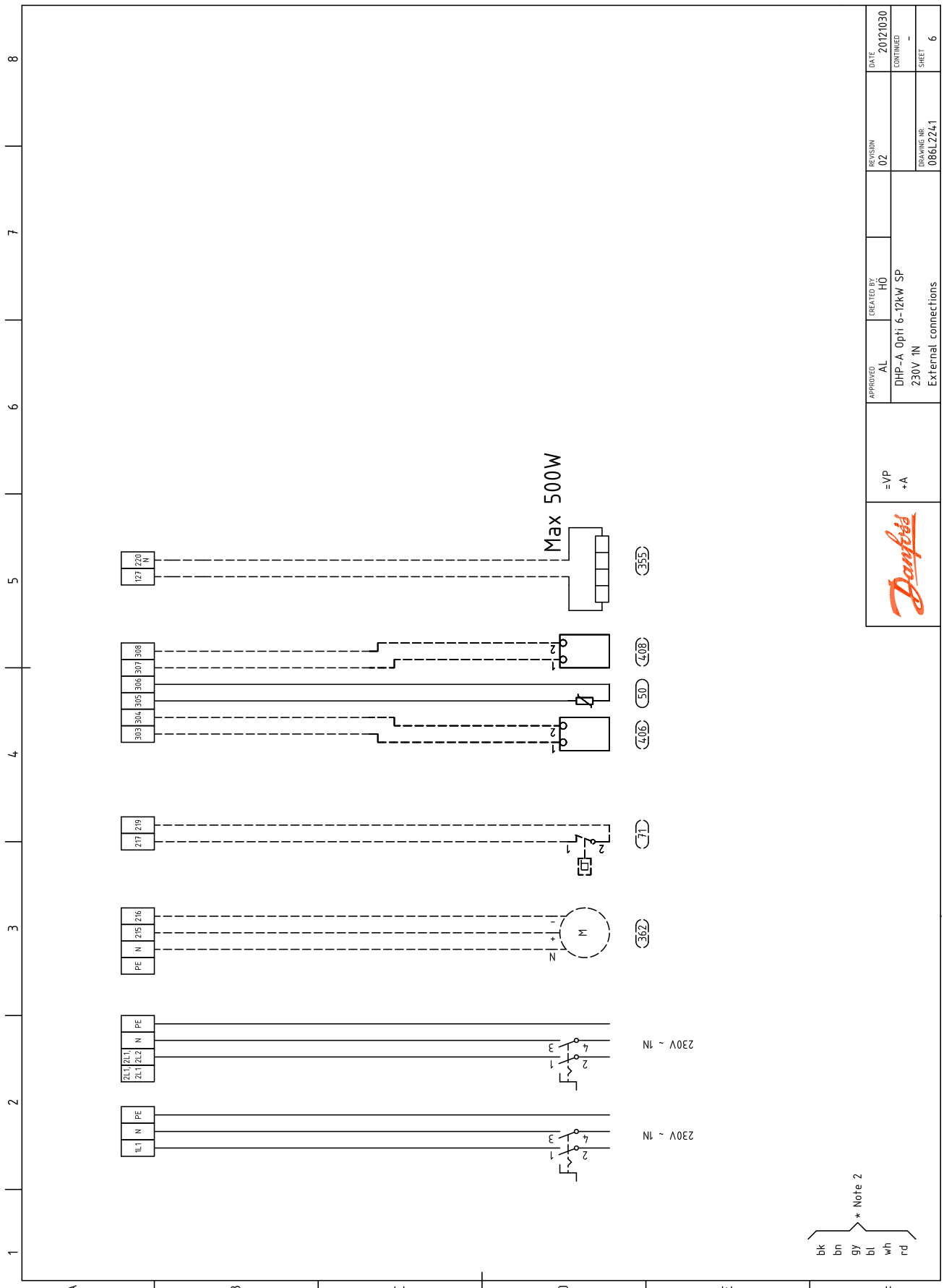



DHP-A Opti 6-12kW SP
230V 1N
Circuit diagram
APPROVED AL
CREATED BY HÖ
REVISION 02
DRAWING NR. 086L2241
DATE 20121030
CONTINUED 3
SHEET 2
=VP +A
DISPLAY
Ext. COM
-E1
-E3
-B1
-B2
-B3
-B4
-B5
-B6
-B7
-B8
-B9
-B10
-FL
-R1
-F11
Rad Out
WW TEMP
Rad In
Brine out
Brine In
HP
LP
TRYCKROR
TOPP TWS
* Note 7
* Note 2


DATE 20121030
CONTINUED 4
SHEET 3
REVISION 02
DRAWING NR. 086L2241
APPROVED AL
CREATED BY HÖ
DHP-A Opti 6-12kW SP
230V 1N
Circuit diagram
=VP
+A
-E1
-M11
-M4
Pump Brine
Pump circulation
0-10V
* Note 8
* Note 9
* Note 2
302
303
bk
bn
gy
bl
wh
rd


=VP
+A
APPROVED AL
CREATED BY HÖ
DHP-A Opti 6-12kW SP
230V 1N
Circuit diagram
REVISION 02
DRAWING NR. 086L2241
DATE 20121030
CONTINUED 5
SHEET 4
-K6
-X2
-M6
-E2
I/O card
24VAC
230VAC
400VAC
Ext. COM
Ext. COM
6kW
6kW
230 VAC
High
Low
* Note 2
bk
bn
gy
bl
wh
rd


Defrost Sensor
-B6
417
353
-K4
-K3
EMI Filter
-M3
-K3 /4C
-K4 /4C
Heat pump
Outdoor unit
387
386
218
104
125
213
211
220/N
PE
283
273
R1 = 1000ohm
R2 = 820ohm
R3 = 710ohm
R3 = 560ohm
R3 = 390ohm
6-8kW
10kW
12kW
0-10 V
Low
High
BU
YE
RD
WH
BK
L
N
bk
bn
gy
bl
wh
rd
× Note 2
=VP
+A
DHP-A Opti 6-12kW SP
230V 1N
Circuit diagram
APPROVED AL
CREATED BY HÖ
REVISION 02
DRAWING NR. 086L2241
DATE 20121030
CONTINUED 6
SHEET 5


Max 500W
230V ~ 1N
230V ~ 1N
* Note 2
bk
bn
gy
bl
wh
rd
=VP
+A
APPROVED AL
CREATED BY HÖ
REVISION 02
DRAWING NR. 086L2241
DATE 20121030
CONTINUED -
SHEET 6
DHP-A Opti 6-12kW SP
230V 1N
External connections

Wiring Diagram DHP-A Opti

Danfoss Heat Pumps
Box 950
671 29 ARVIKA
Phone +46 570 81300
E-mail: dhpinfo@danfoss.com
Internet: www.heating.danfoss.com

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss Heating Solutions and the Danfoss Heating Solutions logotype are trademarks of Danfoss A/S. All rights reserved.

VWBMG102

Produced by Danfoss Heating Solutions © 2013